

HDMI® Transmitter

HD solution for cameras, portable media players, portable internet devices, mobile phones and mobile electronics

Silicon Image brings another exciting high-definition interface to the mobile electronics market. Building on the industry leading SiI9024 discrete HDMI transmitter, the SiI9024A is an ultra low-power HDMI transmitter designed for power-sensitive handheld and portable consumer electronics devices such as mobile phones, cameras, portable media players, personal internet devices and netbooks.

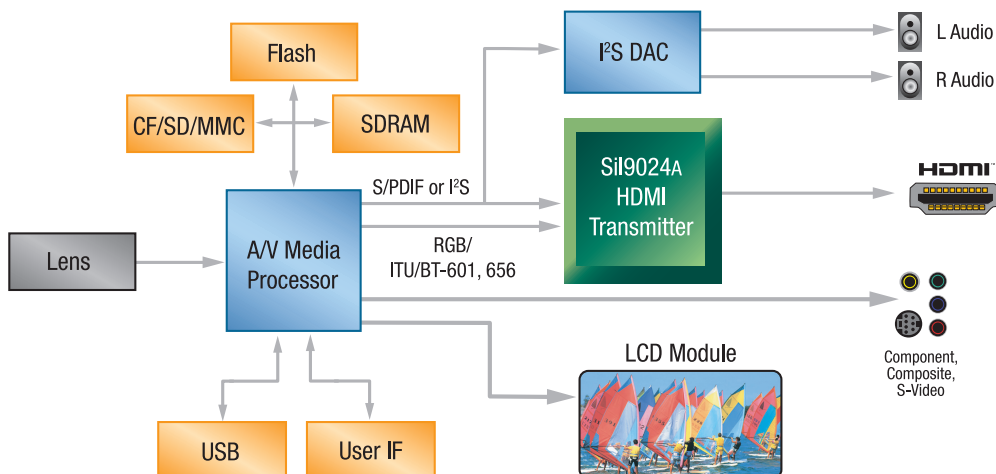
The HDMI standard is the established digital interface that brought the highest quality digital audio and video experience to millions of consumer home entertainment systems. Mobile devices have become the primary store of captured, downloaded, and purchased content. The SiI9024A with integrated HDCP engine and HDCP keys enables consumers to share their user-generated and premium content securely in high-definition format and quality on an HDTV.

The SiI9024A is designed to address the power constraints and small form-factor requirements of the mobile market. A QFN package option offers ease of layout to address the power constraints and low cost requirement of the netbook market. In order to fit the slim profile of today's highly integrated mobile electronics, the SiI9024A is available in 81 ball (0.4mm ball pitch), 49-ball (0.5mm ball pitch) 4mm x 4mm chip scale BGA and 72-pin QFN packages. The SiI9024A maintains software compatibility with

the SiI9024. It supports resolutions from standard definition 480i/p and 576i/p all the way to high-definition 720p, 1080i, and 1080p, the highest resolution supported by HDTVs today. It also supports all PC resolutions up to UXGA for netbooks.

Silicon Image HDMI products are designed according to the requirements of the market segments and are compliant with the latest version of the industry leading HDMI standard for those market segments. The SiI9024A transmitter is no exception—it is fully compliant with the HDMI 1.3 standard including HDMI 1.3 x.v.Color metadata packets. OEMs can design in Silicon Image HDMI hardware and software solutions with the confidence that they are developed and verified according to the latest HDMI Compliance Test Specification (CTS) and SimplayHD interoperability compliance requirements.

SiI9024A Typical Application



SiI9024A

Applications

- Mobile Phones
- Cameras
- Portable Media Players
- Personal Internet Devices
- Netbooks

Key Features

- HDMI 1.3 and DVI 1.0 compliant
- HDCP 1.2 with integrated HDCP Engine and Key
- Supports up to 1080p & UXGA
- Ultra low-power 35mW @ 720p/1080i
- Integrated CEC functions



Sil9024A Features

Sil9024A Software & Documentation

Software

- Sil9024A firmware
Software compatible to Sil9024
- PC based diagnostic tool

Documentation

- Programmer's Reference
- Application Notes
- Datasheet

Compliance

- HDMI 1.3
- DVI 1.0
- Simplay HD
- HDCP 1.2

Digital Video

- Integrated TMDS core
- DTV resolution support - 480i/576i/480p/576p/720p/1080i/1080p
- PC resolution support - VGA/XGA/SXGA/WSXGA/UXGA
- Double data rate up to 165 MHz
- Flexible interface to HD MPEG decoders:
 - 12/24-bit RGB YCbCr 4:4:4
 - 16/20/24-bit YCbCr 4:2:2
 - 8/10/12-bit YCbCr 4:2:2 (ITU-R BT.601 & BT.656)
- Integrated YCbCr → RGB conversion
- 4:2:2 → 4:4:4 up-converter
- Programmable Data Enable (DE) generator

Digital Audio

- DVD-Audio support thru 4xI²S inputs
- Supports 2-channel 192kHz or 8-channel 96kHz
- Supports IEC60958 2-ch PCM or IEC61937 compressed audio (Dolby Digital, DTS, etc.)
- Industry-standard S/PDIF input
- Integrated MCLK generator

Consumer Electronic Control (CEC)

- Dedicated CEC signals
- Integrated hardware arbitration logic reduces local CPU overhead

System Operation

- Simplified API programming through Transmitter Programming Interface (TPI) and CEC Programming Interface (CPI)
- Programmable DDC controller simplifies system design
- Flexible interrupt registers with interrupt pin
- Monitor detection supported through hot plug and receiver sense

Content Protection

- Integrated HDCP cipher engine
- Pre-programmed HDCP keys
- Encrypts both video and audio

Power Management

- 1.2V, 1.8V and 3.3V cores provide low-power operation
- Flexible power-down modes

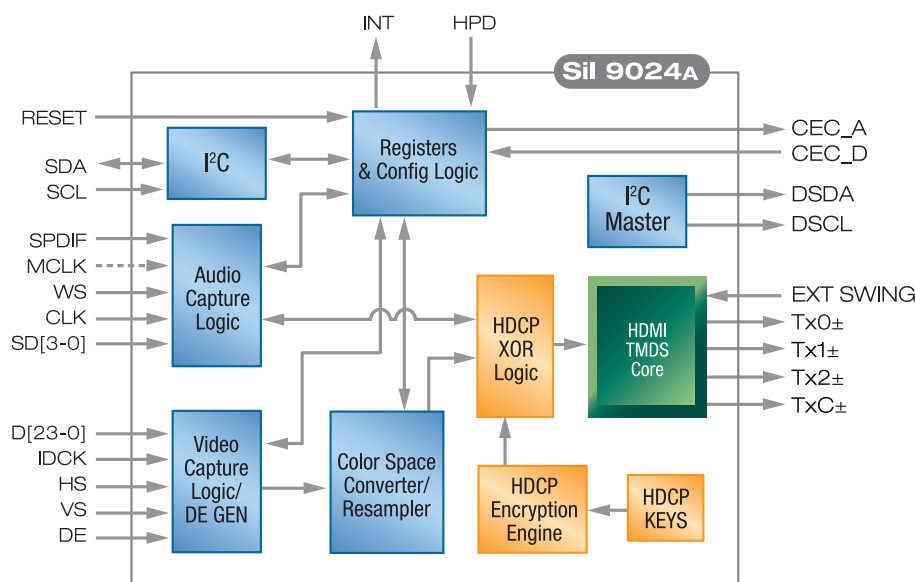
Available Packages

- 81-ball BGA (4mm x 4mm, 0.4mm ball pitch)
- 49-ball BGA (4mm x 4mm, 0.5mm ball pitch)
- 72-pin QFN (10mm x 10mm)

Operating Range

- -20C° to +85C° extended temperature support

Sil9024A Circuit Diagram



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Simply Stored. Connected. Beautiful.

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